OPENING GREEN ICT PRACTICES TO HIGHER EDUCATION – AN ONLINE LIBRARY FOR GREEN KNOWLEDGE

QING GU, PATRICIA LAGO

SOFTWARE AND SERVICES RESEARCH GROUP
VU UNIVERSITY AMSTERDAM
WWW.S4GROUP.CS.VU.NL
MOTIVATION AND OBJECTIVE

Motivation

- Companies and educators lack reusable green practices including operational actions to re-green ICT, metrics, and examples of achieved results
- They lack of alignment between economic impact and environmental effect in green practices

Objective

- Make available in a reusable way the practices devised to achieve greener ICT systems or more sustainable processes supported by ICT.

Approach

- Set-up an online green practices library
An ontology to structure the information to be stored in the library.

Collect and codify practices from industry

- Studied 132 green actions gathered by multiple data centers as part of MJA agreements decided by the Funding Agency of the Dutch Ministry of Economic Affairs, Agriculture and Innovation.
- Codified 76 green practices as an input for the library.

Collect and codify practices from the literature

- Carried out a literature study and found 447 green practices resulted from the search
- Among which, 182 green practices were identified as useful inputs for the library
Implement the online green practices library with the following functions:

- **Registration** is required for sharing practices.
- **Browsing** is open to both registered and unregistered users. Users can browse practices by goals, categories, environmental effects, economic impact, or tags.
- **Searching** provides users a quick and easy way to find practices that fit their needs. Users can search the whole library with keywords or further filter searching results with more specific keywords.
- **Discussion** board offers a platform for users to share their opinions or experiences on certain practices.
Populate the library across multiple channels

GreenITAmsterdam consortium

DUURZAME ENERGIE EVENT E-DEE

VUA Software Engineering Master students
WHAT CAN THE LIBRARY DO FOR YOU?

- The library represents an open resource contributing to improve energy efficiency of ICT or ICT supported business process;
- The detail information provided by the library can stimulate adoption of green ICT practices;
- The long-term effect of the project includes
  - create know-how and awareness in the students on the need to include sustainability in the way ICT systems are designed and developed
  - create a chance to establish collaboration between academia and industry.
WHAT NEXT?

- Estimate the economic value of green IT practices
  
  “A configurable web calculator for each practice”

- Link the library to the web community of SARA/SURFnet
Replace tangible physical goods with e-media

Convert products such as CDs, books, and DVDs, from physical manufactures to digital products (mp3, e-books, HD movie files).

This practice helps achieving these goals
Reduce GHG emissions.

Example for this practice
Savings due to dematerialization are sometimes included in the cases described earlier, but the following examples are useful to define the order of magnitude involved. The manufacture of 100 tons of paper requires over 3000 KWH; and reading a newspaper from the newsstand represents as much as 140 times the CO2 required as reading it online.

Discussion

Environmental Effects
Including Economic Impact
Reduce carbon footprint by avoiding 15.3 tons of carbon dioxide emission.
THANK YOU!

http://greenpractice.few.vu.nl